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BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking Regarding Policies, Procedures and Rules for the California Solar Initiative, the Self-Generation Incentive Program and Other Distributed Generation Issues.	Rulemaking 12-11-005 (Filed November 8, 2012)

OPENING COMMENTS OF BLOOM ENERGY, INC. TO THE ASSIGNED COMMISSIONER'S RULING ISSUING AN ENERGY DIVISION PROPOSAL ON SENATE BILL 861 MODIFICATIONS TO THE SELF-GENERATION INCENTIVE PROGRAM

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Pursuant to the *Assigned Commissioner's Ruling Issuing an Energy Division Proposal on Senate Bill 861 Modifications to the Self-Generation Incentive Program,* Bloom Energy, Inc. (Bloom) respectfully submits these Opening Comments on the Staff Proposal (Proposal).

INTRODUCTION

Bloom Energy appreciates the opportunity to provide comments on the Staff Proposal. Bloom supported Senate Bill 861 and Bloom supports the Commission's efforts to ensure that the purpose and intent of the statute is fully implemented. The legislative mandate contained in SB 861 to continue this program was evaluated and undertaken with full knowledge of the programmatic changes adopted in 2011 in response to Senate Bill 412. Therefore, the Commission's focus – to review and update the program to comply with SB 861 – should not undermine those significant program improvements. Rather, the overall effort should be a continuation of the direction from the Legislature and Governor in extending the Self-Generation Incentive Program (SGIP). Since the major program modifications in 2011, SGIP has now become a technologically diverse, greenhouse gas (GHG) reducing (among other goals) customer incentive program. Continuing the successful operation of the program in the face of increased demand does provide a challenge for the California Public Utilities Commission (CPUC), but the solution is not a dramatic overhaul of this effective program. Instead, there is an opportunity to make precise, strategic changes that will enable a more competitive and fair program for the multitude of clean distributed energy resources (DER) that will reduce carbon and criteria air pollution, increase the reliability of the grid, provide demand reduction and most

of all encourage customers to invest their own money in helping the state transform our energy future. Therefore, the Staff Proposal should be viewed through this lens and the CPUC should take only those recommendations that continue in this vein. Radical recommendations should be rejected.

The Staff Proposal makes recommendations that are not supported by data and are in some cases severe, specifically with regard to all-electric fuel cells. The Staff Proposal also suggests significant changes that would fundamentally change the SGIP from an inclusive, technology-neutral clean energy resource (generation and storage) program to a primarily energy storage program. Although there is significant interest and anticipation of the role that storage can play in the future, the CPUC should continue to recognize the role other technologies and resources currently play and will continue to play in the grid of the future. Fuel cells generally, and all-electric fuel cells specifically, are meeting the goals of the program and should remain in the program. Indeed, any and all technologies that meet the goals of the program should be included.

The role of incentive programs and the level of participation of any one company are matters that continue to be sources of concern with the program. As such, we address these first, followed by comments on the Staff Proposal's specific recommendations.

Glide Path to Incentive-free Future

The primary criticism of SGIP, and incentive programs in general, centers on how much money is reasonably necessary to incentivize desired policy goals. It is reasonable to expect that technologies supported by programs like SGIP will improve over time in a variety of ways. It is also reasonable to expect incentive programs to accelerate the movement of new technologies from early commercialization to subsidy-free deployments. While not all technologies will improve and move to subsidy-free commercialization in the exact same way or in the exact time, there needs to be a glide path to encourage technologies to "graduate" from traditional incentive programs and be able to compete fairly in the market.

Bloom urges the CPUC to support a workable glide path for technologies to compete independent of subsidies such as SGIP, which is not the case with the current Staff Proposal. There is precedent for such action – most specifically with the movement of roof top solar out of SGIP to the California Solar Initiative and towards independence from incentives. A steep

decline or complete removal from SGIP of any specific technology that is still new to the market when there is not a clear path forward would squander the investment the state has made in this technology thus far. Ensuring that there are policies in place post SGIP to allow a technology to fairly compete and operate is a critical aspect to any comprehensive energy plan.

Bloom has and will continue to work in all arenas to enact policies that allow clean energy technologies like ours to continue to thrive in a competitive market. Bloom can play an important role for our state by providing reliable and clean energy in key locations on the grid, and can continue to enhance reliability for California's large energy users.

Bloom looks forward to continuing to help achieve the goals of SGIP by providing a California invented, California manufactured, clean energy solution that enables California customers to make investments that help the state meet its climate and energy goals. We urge the CPUC to continue the successes of SGIP and support policies for distributed generation technologies that allow full market participation.

RESPONSES TO STAFF PROPOSAL

I. Background and Introduction

The Staff Proposal recommends eliminating all-electric fuel cells from SGIP based on flawed assumptions of the Itron Cost Effectiveness Report (Itron CE) and a backward looking view of technology performance with respect to GHG emissions.[1] All-electric fuel cells should not be removed from the program as they meet *all* of the existing and proposed goals of the program and are relatively early in commercialization – precisely the type of technology SGIP was designed to support. In fact, the 2013 SGIP Impact Report shows that all-electric fuel cells were the first or second largest contributor to each of the key metrics measured.

- Energy Impacts – **1st**
- Annual Weighted Capacity Factor – **2nd**
- Portion of Capacity Online as a Function of Age – **1st**
- Capacity Factor of Online Capacity as a Function of Age – **2nd**
- CAISO Peak Hour Impact – **2nd**
- CAISO Peak Hour Capacity Factor – **2nd**

[1] Staff Proposal, Page 13

- Total GHG Reductions – **1st**
- Total Criteria Air Pollutant Reductions – **1st**
- GHG Reduction Rate on a Tons/MWh Basis – **1st**
- Criteria Air Pollutant Reduction Rate on a Tons/MWh Basis – **2nd**

If the concern driving the staff recommendation is that all-electric fuel cells may not be cost effective, the report on which this conclusion was drawn is unreliable as it has noted gaps, uses imperfect assumptions, and relies upon inaccurate data. More importantly, as the staff note, cost effectiveness is not an eligibility factor and the CPUC has already issued a Decision eliminating cost effectiveness as a factor in determining program eligibility. If the staff recommendation stems from the concern over the dollar amount customers have received from the program for all-electric fuel cells, such concern is misplaced as it has already been addressed via program modifications to ensure reasonable distribution of program funds. Furthermore, it should be noted that the clean energy space is filled with a myriad of technologies that have received incentives for much longer time periods.[2] All-electric fuel cell projects are meeting the goals of the program and therefore should remain eligible for a program that was explicitly designed to incent customer sided resources, both renewable and otherwise.

Bloom is very interested in working with the CPUC on policies that ensure emerging technologies are able to move from incentive programs to long-term, self-sustaining market participation. SGIP remains the only program in California to support all-electric fuel cells. Most other technologies have mandated utility procurement and other programs that create market demand.[3] In order to ensure a technology can move from an incentive program to fair market

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[2] Energy Tax Act of 1978 (federal tax credit for EE, solar, wind technologies); Public Utility Regulatory Policies Act of 1978 (CHP, renewables given favorable treatment in utility procurement as Qualifying Facilities); CEC Emerging Renewable Energy Program started in 1998 (solar PV, wind, renewable-fueled fuel cells, solar thermal)

[3] CHP Feed-in Tariff (http://www.cpuc.ca.gov/PUC/energy/CHP/feed-in+tariff.htm); CA Renewables Portfolio Standard (http://www.cpuc.ca.gov/PUC/energy/Renewables/); Renewable Feed-in Tariff Program (http://www.cpuc.ca.gov/PUC/energy/Renewables/hot/feedintariffs.htm); Bioenergy Feed-in Tariff (http://www.cpuc.ca.gov/PUC/energy/Renewables/hot/SB_1122_Bioenergy_Feed-in_Tariff.htm); Energy Storage LSE procurement targets (D.13-10-040); California Solar Initiative (http://www.gosolarcalifornia.ca.gov/csi/index.php); Solar Property Tax Exemption (http://www.boe.ca.gov/proptaxes/gase.htm); Renewable Full Retail Net Energy Metering (http://www.gosolarcalifornia.ca.gov/solar_basics/net_metering.php); Renewable Auction Mechanism (http://www.cpuc.ca.gov/PUC/energy/Renewables/hot/Renewable+Auction+Mechanism.htm)

competition policy makers should ensure a glide path off of incentives. We look forward to exploring these options with the CPUC. In the meantime, excluding a technology that meets the program goals is prejudicial and not justified by legislative intent or the state's environmental, energy, or economic objectives.

II. Program Goals and Requirements

A. SGIP Goals

Bloom agrees with the proposed program goals, both those cited in statute and recommended by staff. Bloom strongly supports the program goals of GHG reduction and reduction of criteria air pollutants, ensuring that SGIP helps the state achieve its climate and clean air objectives. Comments herein provide further detail that should be incorporated into final program modifications.

Reduce criteria air pollutants – PU Code Section 379.6 requires that each SGIP technology "improves air quality by reducing criteria air pollutants." Bloom agrees that the CPUC should require technologies to hold a California Distributed Generation Certification, as this certification sets appropriate emissions standards. Evaluation of this criterion should consider the impact the generation or storage system has on the overall site emissions on a cumulative, 24x7 profile, to account for the difference between always-on and intermittent technologies. Since SGIP incentives are awarded on a capacity basis, the CPUC should consider the total impact of each technology based upon the reductions achieved per rebated capacity (kW).

Limit other Environmental Impacts: Water Use – We applaud the inclusion of this important matter as part of the environmental considerations of the program. As we stated in our previous comments, given the ongoing drought and the potential for additional restrictions on water usage, the CPUC should add water use as a criterion and should measure water reductions using a methodology similar to that used for GHG and criteria air pollutant emissions reductions. The CPUC should consider referencing the existing California Energy Commission (CEC) Water Use Factor for Gas and Electricity Efficiency Savings, which estimates demand reductions that avoid grid generation save 377 g/MWh.[4]

[4]http://www.energy.ca.gov/title24/2013standards/prerulemaking/documents/current/Reports/General/2013_Initial_Study_Air_and_Water_Emission_Factors.pdf

Reduce or shift peak demand – Weighing coincident peak demand should not come at the expense of acknowledging the benefits of predictable 24x7 demand reduction, which includes reducing coincident peak demand. Firm distributed generation (DG) provides both system and local benefits by reducing coincident peak demand through customer demand reductions at all times of the day. Bloom Energy Servers, for example, provide reliable, 24x7 capacity and therefore offer predictable operations and customer load reductions at all times including coincident peak demand.

Improve Efficiency and Reliability of the Distribution and Transmission System –

The CPUC should measure the impact of SGIP technologies on grid reliability. SGIP technologies only enhance grid reliability if the resource can be relied upon to provide demand reductions and free up capacity on the grid when and how they are needed. The CPUC can measure grid reliability benefits based upon each technology's availability and the extent to which it generates or provides power in a predictable manner over time.

Reliability is an important benefit and attribute of many SGIP technologies and should be accounted for within the program. This attribute should be considered when setting the incentive levels for technologies because it is a program goal. Firm DG acts like a permanent, predictable load reduction which can improve grid reliability by reducing demand overall including in specific locations where the transmission and/or distribution network is overloaded. Furthermore, some SGIP technologies offer islanding capabilities which further enhances reliability, often eliminating a customer's need for a dirty backup generator.

Lower Grid Infrastructure Costs – The CPUC should apply a more rigorous methodology to the measurement of avoided transmission and distribution costs. The 2013 Impact Evaluation Report shows that SGIP is having a potentially very large benefit in this category - both in the form of avoided energy losses and in the form of avoided system upgrades due to reduced loading on distribution feeders. The 2013 SGIP Impact Evaluation showed that onsite generation can result in deferred distribution upgrades. This is only possible if reliable resources are online during hours of the year when the distribution system is overloaded. While intermittent resources may or may not be available during these hours, firm distributed generation is guaranteed to reduce demand during these hours. Future SGIP Impact reports should measure this benefit in more detail across different types of SGIP technologies. It should be noted that these same attributes (relieving load on the distribution system) also increase

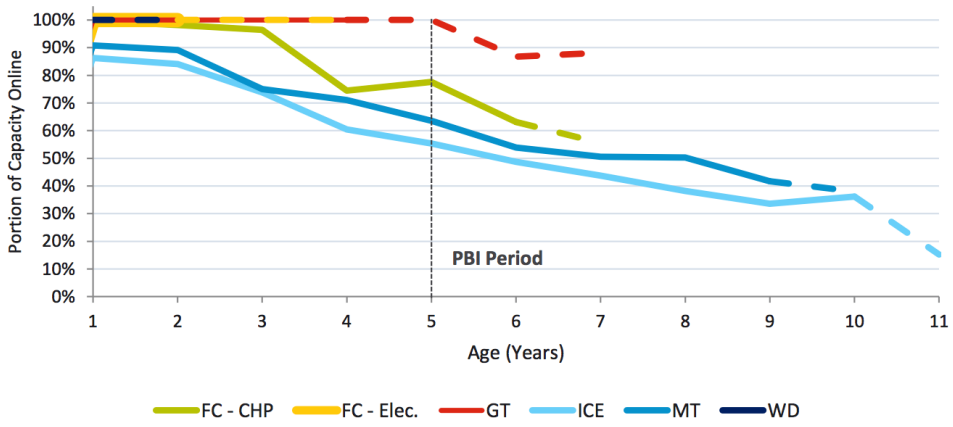
system efficiency and reliability. The Impact Report also showed the potential of SGIP projects to support frequency control, voltage regulation, reverse power flow, operational flexibility, and reduced wholesale electricity rates. The CPUC should account for and measure these grid benefits as they are components of the overall program value.

Provide Ancillary Services **–** Bloom Energy Servers can provide reactive power compensation by a leading or lagging power factor that can be adjusted on a periodic basis such as a seasonal adjustment as well as dynamic VAR support. As increasing quantities of variable resources are added to the electric system and increasing quantities of end-use demand response and storage technologies are installed in homes and businesses, the benefits associated with the provision of ancillary services could increase significantly. We agree that this goal should be included and evaluated as SGIP technologies are indeed providing this measurable benefit.

Ensure Customer Reliability of DER – The Staff Proposal notes that "system reliability is presented as an SGIP goal in 379.6(a)(1) and required to be used as a criterion in allocating funding across technologies in 379.6(h)(2), while customer reliability is required to be measured in gauging program success in 379.6(l)."[5] However, staff proposes "that the customer reliability criterion be assumed to have been met, a priori, because customers would not choose technologies which rendered their provision of electric service less reliable."[6] There are two critical flaws in this reasoning. First, while it may be reasonable to assume that customers would not choose technologies that would make them more likely to have disruptions in their electric supply, it should be recognized that some technologies make them significantly *less* likely to experience interruptions. For example, all-electric fuel cells can significantly increase a customer's reliability by islanding from the grid in the event of a grid outage, continuing to provide power to critical operations. Second, this is over-simplifying an attribute that is critical to many customers in California. The program should account for customer reliability by considering the extent to which the technology reliably performs as intended. The 2013 SGIP Impact Report shows that for many technologies, customers have chosen to decommission their SGIP-rebated capacity. Thus, these technologies that were supported by ratepayer incentives *cannot* be assumed to be reliably providing the service intended.

[5] Staff Proposal, Page 8
[6] Staff Proposal, Page 8

FIGURE 5-6: PORTION OF CAPACITY ONLINE AS A FUNCTION OF AGE



Market Transformation – Bloom agrees with a market transformation goal in principle - "promote market transformation of emerging technologies that have the potential to provide valuable grid services cost-effectively" - but cautions against forward-looking attempts by the CPUC to determine which technologies have the potential to be cost-effective absent incentives in the future. When dealing with rapidly evolving technologies, looking backwards at data from previous generations is not a rational way to assess future cost effectiveness and is contradictory to the very concept of market transformation. As noted in the Assigned Commissioner's Ruling released in April[7], market transformation has been a de facto program goal and should now be officially recognized. Successful market transformation will be measured by significant adoption in California beyond SGIP, and will be a mark of not only the program's impact and success but also of the technologies' success in moving into non-subsidized commercial operation.

B. Requirements for Program Design

1. Maximize the Value to Ratepayers from SGIP Incentives

The Staff Proposal recommends two design principles: 1) lowering rebates for those qualifying technologies which meet too few of the program goals and 2) lowering rebates for those technologies that are already cost effective from the participant's perspective.

Bloom agrees in theory with both principles, but a data driven analysis must be undertaken to effectively design and determine program design. With regard to principle #1, a data driven approach, as outlined below, must be used to determine the impact of each technology against

[7] Assigned Commissioner's Ruling, Page 5

program goals. With regard to principle #2, Bloom agrees in concept but cautions the CPUC to only reference validated data in determining which technologies are cost effective from the participant's perspective. Recommendations below support a data-driven analysis to determine rebate levels and structure that maximizes value to ratepayers.

III. Eligible Technologies

A. List of Requirements for Technology Eligibility and B. Review of Technologies with Respect to the Requirements

Technologies should be eliminated from SGIP only if they do not meet the statutory eligibility criteria of the program or are supported by a different incentive program. The CPUC should have an inclusionary policy that promotes innovation and advanced technologies consistent with the state's progressive energy policies. So long as a technology meets the eligibility criteria, and is not supported by a different incentive program, (i.e. CSI program for solar), it should be eligible to participate. Bloom comments here only on requirements that need clarification or change.

Lower GHG Emissions – Per D.15-11-027, Bloom supports the use of the recently reduced GHG eligibility standards. For the 2016 program year, these standards are 1) 350 kg CO_2/MWh averaged over the first ten years of project operations, and 2) based upon the assumed 1% annual degradation factor, 334 kg CO_2/MWh beginning of life efficiency eligibility standard.

However, compliance with this threshold must be determined prudently. As has been the case in previous program years, technologies wishing to compete in the program must demonstrate compliance with the 334 kg CO_2/MWh beginning of life efficiency using an appropriate testing proposal. And, as has been the case in previous program years, compliance with the 350 kg CO_2/MWh cumulative average requirement can be measured through the Performance Based Incentive.

The Staff Proposal is flawed in its attempt to determine future compliance with these requirements based upon past performance. Past data cannot accurately indicate future performance of technologies, particularly those currently categorized within the program as Emerging Technologies. New generations of fuel cell technology have shown a continual improvement in efficiency, and using past performance of old generations to determine future eligibility of new generations would fundamentally undermine the goals of the SGIP program to

drive market transformation. In fact, the Staff Proposal agrees, stating "that future technological and market developments cannot be known with certainty."[8] It is reasonable to expect that future all-electric fuel cell technologies will be able to meet the 350 kg CO_2/MWh cumulative average efficiency requirement given that, as the Staff Proposal states, 351 kg CO_2/MWh is the "ten year average of GHG emissions for each pure electric fuel cell [currently] in SGIP", which is above the newly established eligibility threshold "by a small margin."[9] The Staff Proposal relies on information about previous iterations of fuel cell technology and does not reflect the performance of the newest technology. Technologies should not be eligible for SGIP if they do not meet the statutory requirement of GHG reduction, and any must be able to participate if they demonstrate compliance with the new GHG factor.

Lower or shift peak load to off-peak –We concur with the Staff Proposal that this criterion can be met by all eligible technologies, and encourage the appropriate monitoring and measurement to ensure that all projects operate in a way that is consistent with this requirement.

Be Safe and Commercially Available –The CPUC should ensure commercial availability by requiring SGIP eligible technologies to actually be available for sale with a contract for delivery by the vendor that meets the current time parameters set in the SGIP Handbook. Technologies should be required to be NRTL listed to UL standards and compliant with Rule 21 interconnection and IEEE1547 standards.

Reduce Criteria Air Pollutants – As previously discussed in the Program Goals and in more detail in the Cost Effectiveness and Market Transformation section below, reducing criteria air pollutants is critical, should be measured, and should be included as an eligibility requirement.

Cost Effectiveness and Market Transformation – The Staff Proposal adds two "soft requirements:" cost effectiveness and market transformation. Neither of these are eligibility requirements of the Program. Additionally, the Itron Cost Effectiveness Report (Itron CE), which is cited as the key source for determining cost effectiveness, relies upon incorrect data (which will be discussed further below) and needs further input and review in order to be a viable source.

[8] Staff Proposal, Page 9
[9] Staff Proposal, Page 11

Cost Effectiveness – In 2011, the CPUC rejected a staff proposal to use a cost effectiveness test as an eligibility screen citing concerns that such a requirement "could slow investment in the SGIP and hamper market transformation for technologies that could contribute to reducing grid emissions."[10] The CPUC correctly pointed out that the proposed cost effectiveness test suffered from limited availability of actual cost data and "too many variables and assumptions that could lead to inconsistent results in calculating the cost-effectiveness of various technologies" and ultimately found that "a cost effectiveness screen might not yield reliable results."[11] Bloom echoes these sentiments with regards to the current staff recommendation to use performance in a Societal Total Resource Cost (STRC) test as a desirable but not required eligibility criterion

It's important to note that the CPUC did not publish the SGIPce model for public review prior to or during the Itron CE study. The cost effectiveness report included on the CPUC SGIP website summarizes the model, but given the size and complexity of the model there is no way for a report to provide the appropriate level of transparency into the inputs and mechanics of the model. Privately held companies like Bloom Energy that do not publicly disclose certain proprietary capital or service cost information were not given the opportunity to validate or challenge the assumptions used in the model, and the result is a model built upon flawed inputs. The report itself is hardly transparent – the inputs and assumptions for each technology are not clearly listed anywhere but rather hidden within the several spreadsheets. While it is difficult to locate the inputs and assumptions used, below are several examples of unreliable data and assumptions used in the Itron CE Study that we were able to identify, highlighting the shortcomings of the study and why it cannot be relied upon for determining eligibility in the program[12].

1) The efficiency for all-electric fuel cells, 54%, is derived based on an average first year efficiency of the installed SGIP fleet. There are two issues with using this number for the analysis:
    - As stated above, historical data should not be used to project future performance. The latest all-electric fuel cell technology has a starting efficiency above 60%. In fact,

[10] Decision 11-09-015 p. 12
[11] Decision 11-09-015 p. 13
[12] http://www.cpuc.ca.gov/NR/rdonlyres/A2A26928-9D12-4F28-B42E-B7C94B0DDDE6/0/20151119FINALFULLREPORT.pdf

54% equates to 370 kg CO_2/MWh, which is not compliant with the new GHG standard of 350 kg CO_2/MWh, so of course no technologies with an average emissions rate of 54% will be eligible for the program. If staff wishes to use the study to determine the cost effectiveness of technologies in the program in future years, at the very least they must assume that those technologies operate in compliance with the program.

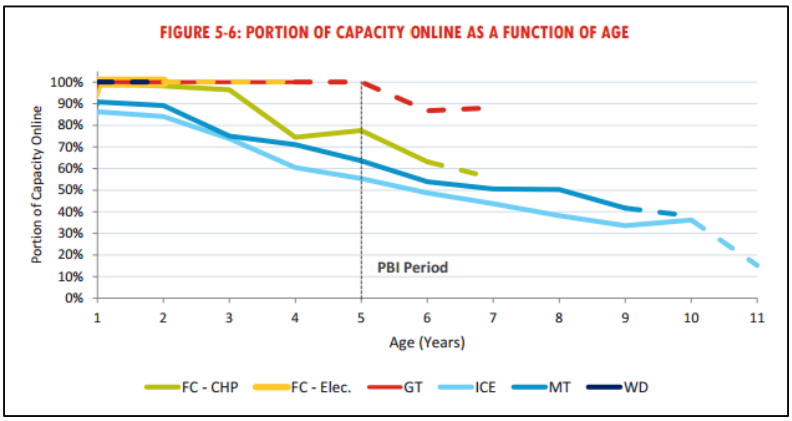
- It is not clear if 54% is used as an assumption for the 'average' efficiency of the project life or the 'beginning of life.' In either case, the data is not valid – consistent with program rules, technologies will need to have a at a minimum a beginning of life efficiency equal to 334 kg CO_2/MWh and a ten year average of 350 kg CO_2/MWh.

2) The annual degradation factor, included to account for a reduction in performance over time, is set to 5% in the model for fuel cells as a class. In the "Sources of Degradation and Life" tab of the electric fuel cell-specific worksheets provided with the SGIPce model, the sources referenced to support this number are based upon Molten Carbonate Fuel Cells (MCFCs) and Phosphoric Acid Fuel Cells (PAFCs), both of which are significantly different technologies than the Solid Oxide Fuel Cells (SOFCs) that Bloom manufactures.[13] Since the report does not reference any data related to SOFCs, it cannot be used for determining eligibility of SOFCs. Rather than relying on invalid and irrelevant data, it would be more appropriate to assume that any future technologies operating under the program will at least be compliant with the program - that is, a starting efficiency of 334 kg CO_2/MWh with a 1% degradation factor.
3) To estimate fuel costs for fuel-based SGIP projects, the Itron CE Study uses the CEC's natural gas price projections for estimating IOU-specific natural gas prices in the future and Energy Information Administration (EIA)'s annual energy outlook for Henry Hub natural gas price projections.[14] The study report references the EIA 2010 Annual Energy Outlook and the 2009 CEC Energy Demand Forecast. Both of these sources are more than five years old. Most critically, Henry Hub natural gas commodity prices have decreased significantly since the EIA's 2010 Annual Energy Outlook (AEO), which

[13] Model references: T. Tanimoto, M. Yanagida, T. Kojima, Y. Tamiya, H. Matsumoto, Y. Miyazaki, Long-term operation of small-sized single molten carbonate fuel cells, Journal of Power Sources, Volume 72, Issue 1, 30 March 1998, Page 78; UTC Power Model 400 Specifications Sheet
[14] Itron. *SGIP Cost Effectiveness Study.* Appendix E, Page 510

projected natural gas prices to be several dollars per MMBtu higher than they are today. Even the EIA's most recent AEO, published in April 2015, projects natural gas prices in 2016-2028 to be over 40% higher than natural gas futures prices as of January 4, 2016.[15,16] Customers using natural gas technologies are able to contract for their fuel supply based on the current commodity market forward prices, so the current forward curve should be used to more accurately represent the total cost of ownership of SGIP technologies that run on natural gas.

In addition to the uncertainties in output introduced by the inaccurate inputs listed above, the SGIPce model does not take into account all important attributes and market risks. For example, permitting can represent a significant cost and varies by technology. Fuel cells, unlike other technologies with higher local environmental impacts, are exempt from air permitting, thus decreasing cost as well as time to power. Another example of a technology attribute that is not taken into account is customer satisfaction. Figure 5-6 from the 2013 SGIP Impact report shows that many SGIP technologies are taken completely offline after a number of years. It does not matter how cost-effective a technology is based upon a theoretical modeling exercise if that technology is not actually used for its entire lifetime. 100% of the all-electric fuel cell projects installed in CA remain operational.



[15] U.S. Energy Information Administration Annual Energy Outlook 2015, Table A1 (see "Natural Gas at Henry Hub (dollars per million Btu)" in nominal dollars), available at http://www.eia.gov/forecasts/aeo/

[16] Henry Hub natural gas futures settlement prices are publicly available from the CME Group: http://www.cmegroup.com/trading/energy/natural-gas/natural-gas_quotes_settlements_futures.html

Market Transformation – With regard to the forthcoming *Market Transformation Study*, Bloom requests that the CPUC avoid repeating the mistakes made in the Itron CE Study by making a draft of the report available to provide transparency before the report is finalized.

C. Staff Recommendations for Eligible Technologies

The staff recommendation to remove natural gas-fueled, all-electric fuel cells from SGIP is based on a flawed assumption of the GHG-reducing performance of the technology and an inaccurate cost effectiveness model. Meeting the new GHG factor is a statutory requirement for program eligibility which Bloom strongly supports; however, the CPUC should not look at outdated data to pick which technologies they think will be able to meet the standard. Rather, the CPUC should use the measures already in place (the PTC-50 and the PBI) to ensure that any technology that does meet the standard can participate. Compliance moving forward should not be based on looking backwards, but rather on current performance data that reflects the most up to date technological advances. As for the cost effectiveness test, the CPUC already considered and rejected the use of such a test for the purposes of eligibility during the program revisions in 2011. In the current proposal, staff states that "because of the uncertainty inherent in this type of analysis, we will treat this criterion like a preference rather than a requirement."[17] Listing this now as a "soft" requirement reflecting "desirable qualities, but not required" does not get around the previously cited concerns of the CPUC nor the inaccurate assumptions discussed above. Further, if cost effectiveness is a preference rather than a requirement, staff has no grounds to suggest removing technologies from the program for not meeting something that is not a requirement.

IV. Biogas

There are indeed market barriers to the use of onsite and directed biogas that make SGIP all the more important as a tool to enable the use of biogas. Although there is significant demand for directed biogas, it is expensive. However, even with this expense there is still an interest to use directed biogas and therefore it should be maintained as an option for customers that have a willingness to take on the cost and challenge of directed biogas.

Staff cites that directed biogas performs poorly from the STRC perspective. As already

[17] Staff Proposal, Page 9

noted, the STRC and the Itron CE report need further review and edit in order to be valuable. Bloom finds this assessment inconsistent with our customer and market experience. Many customers choose to do directed biogas projects because they view it as the most impactful way to meet a significant portion of their energy demand using renewable energy. As the staff notes, the state has focused and continues to focus on the development of biogas resources and as such, onsite and directed biogas need to be included in SGIP, one of the few places biogas projects are incentivized.

Bloom agrees with the staff recommendation that the biogas rebate be prorated based on the percentage of biogas in the blend, or the "biogas blend ratio." If the staff recommendation to hold payments until the Renewable Fuel Use Report (RFUR) is finalized, the CPUC should reverse its recent decision and issue the RFUR quarterly rather than semiannually in order to prevent lengthy delays in PBI payments.

To potentially enable more biogas projects, and provide statewide policy consistency, the CPUC should align the SGIP biogas policy with Renewable Portfolio Standard (RPS) policy which was adjusted in 2012. Requiring that the "project must meet the currently applicable RPS eligibility requirements for biogas injected into a natural gas pipeline (pipeline biomethane)" should be the standard for SGIP. Clarifying this requirement would rationalize and harmonize SGIP and RPS and allow the programs to work together. This clarification would also increase the availability of biogas resources, making biogas projects more viable.

V. Budget Categories and Rebate Design

A. Design Principles

The recommended Design Principles are sound.

B. Basis for Rebate Declines

The staff's recommended method, a dollar-based rebate decline, as summarized in the Staff Proposal will solve several issues that are problematic from the staff's perspective: eliminates program interruptions; avoids all opening day stampedes, except the first one; eliminates all waitlists; and simple design.

With the caveat that other programmatic changes are made, namely a more equitable allocation of funding categories and clarification of eligible project costs, Bloom supports the staff's recommendation to move to a dollar-based rebate decline. Clearly the allocation of funds

needs to be reflective of the statutory requirements of the program, historical customer interest and objectivity. This is discussed further in section below on "Technology Budget Categories." In order to ensure rebate dollars are spent as efficiently as possible the CPUC needs to ensure that project costs are not inflated resulting in overly generous incentives as discussed in Section M. Cap O&M Project Costs.

Pending changes on the allocation of funding categories and clarification on eligible project costs, Bloom supports the dollar-based rebates decline. However, if these issues are not addressed, Bloom would not support a program change in the rebate decline as companies could quickly use nearly all of the available funds without proper checks and balances. For instance, if the program went forward with the Staff's recommendation that the manufacturer's cap could be lifted by decision of a Program Administrator (PA) and the funding allocation favored one technology over the other technologies and project cost were inflated, money could be allocated very swiftly to one company's technology.

C. Technology Budget Categories

The staff recommendation on budget allocation completely dismisses the participation of all-electric fuel cell projects in its methodology and proposes to allocate 75% of the funds to one technology - storage. Given this, the Staff Proposal should not carry any weight as it ignores the significant growth of fuel cell adoption under the program. Using the staff's methodology of looking at historical participation, but not arbitrarily excluding fuel cells, the funding would be broken down into 55% AES, 40% fuel cell and 5% for all other technologies.[18] On its face this is clearly a bad methodology as it prevents new technologies from even competing. Essentially the Staff Proposal shifts SGIP, a technology *resource* (generation and storage) neutral program to a storage program. If the intent of the legislature was to create a storage only program they would have done so. The statute clearly states "It is the intent of the Legislature that the self-generation incentive program increase deployment of distributed generation and energy storage systems".[19]

With the clarification that the Staff Proposal ignores the history of the program and therefore should be dismissed on this particular issue, Bloom suggests other options for the budget allocation. The allocation of funding is intended to enable more participation by a variety of technologies. The programmatic changes in 2011 and the entry of storage technologies has

[18]Staff Proposal, Page 22
[19] PU Code 379.6 (a)(1).

enabled more competition, evidenced by the over subscription of the program. SGIP no longer has excess funding; instead, the robust participation of a multitude of technologies has resulted in a shortfall of funding. This is one area of the program where changes likely make sense. A new categorization should aim to align with the goals of the program rather than limit competition.

The CPUC should consider eliminating the categories as the categorization serves to make the administration of the program more complex than needed. Historically, the categories have served to allocate the budget amongst various technologies with rules on how to move money between categories. In the years since 2011, the PA's have had to move money between categories on a regular basis, indicating that the categories are not entirely effective, and add administrative burden. Eliminating the categories provides for more competition and ease of administration. Meanwhile, the existing manufacturer's cap ensures that no one company can utilize more than 40% of the funding.

However, if the CPUC finds reason to keep the category construct, the categories should better reflect the current nature of the program, and the CPUC should create "generation" and "storage" categories. Considering that generation and storage are fundamentally different technologies with different operating characteristics and different levels of impact to program goals, it could be appropriate for them to be separated into different categories.

Since 2013, storage has had the largest number of applications and correlating incentive dollar amounts[20] in the program with increasing application volumes. It may be appropriate to divide the funding between generation and storage technologies considering that storage has other avenues to incent market development, such as the utility mandate for 1.3 GWs, incentive payments under the utilities' permanent load shifting programs and other ratepayer funded utility projects.[21] Given that the CPUC has established utility targets for customer-sited storage procurement, it would make sense to align program funding in a way that would support the ultimate achievement of those targets.

The utilities are required to procure 200 MW of customer-sited storage by 2020, but are allowed to count storage installed since 2010 towards that goal. Considering the 139 MW of

[20] Staff Proposal, Appendix B
[21] R.10-12-007, Decision Adopting Energy Storage Procurement Framework and Design Program, dated Oct 21, 2013.

energy storage already installed or reserved under SGIP since 2010, the remaining requirement is 61 MW. The energy storage incentive rate is $1,430/kW in 2016 and declines by 10% annually through 2020, resulting in an average incentive rate of $1,171/kW over this time frame. Thus, the total SGIP funds committed to storage between 2016 and 2020 should be $71M. This is 18% of the $385M SGIP budget between for 2016-2020. Accordingly, the 'storage' category should be equal to approximately 20% of program funds annually and the 'generation' category should be approximately 80% of program funds annually. This recognizes the other market drivers that are available to storage technologies, namely a utility procurement mandate, that is not available to most of the generation technologies supported by SGIP. Additionally, some of the remaining 61 MW referenced above could be deployed through other avenues. As market transformation is a goal of the SGIP, the CPUC should consider all of the market drivers that will move a technology through the stages of market development. Bloom reiterates its recommendation to eliminate budget categories, but if the CPUC chooses to create categories of generation and storage, it should factor in the other mandates and policy mechanisms in place for the SGIP eligible technologies when establishing the allocations.

D. Initial Rebate Levels

There are three key flaws with the way the Staff Proposal proposes to determine rebate levels:

1) The Staff Proposal arbitrarily assigns a weighting of 'importance' to each of the program goals. There is nothing in statute to suggest that any of the program goals are more important than others. For example, the Staff Proposal ranks criteria pollutants as the *least important* of the program goals, but statute does not make this delineation. The EPA recently conducted an analysis of the monetary value and health benefits of each ton of avoided criteria air pollutants in California.[22] Considering SGIP reduced 233,852 lbs of NOx, 69,077 lbs of PM10, and 11,991 lbs of SO2 in 2013[23], according the EPA's estimates the criteria air pollutant reductions from *SGIP save up to four premature deaths per year and save up to $32M per year*. Further, California has the worst air quality in the nation.[24] This highlights that it is inappropriate and arbitrary for the Staff Proposal to

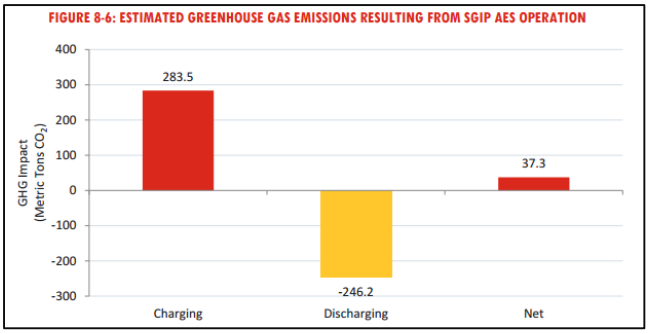
[22] http://www.epa.gov/sites/production/files/2015-08/documents/cpp-final-rule-ria.pdf; Table 4A-3 and 4A-6

[23] http://www.cpuc.ca.gov/NR/rdonlyres/AC8308C0-7905-4ED8-933E-387991841F87/0/2013_SelfGen_Impact_Rpt_201504.pdf

[24] http://www.businessinsider.com/states-with-the-dirtiest-air-2015-12

suggest that certain program goals are more or less important than others. The goals must be weighted equally.

2) The Staff Proposal arbitrarily assigns a weighting to each of the technologies against each of the program goals. To highlight how arbitrary these rankings are, let's take the example of energy storage and GHG reductions. The Staff Proposal assigns the highest possible rating, a "3" to energy storage. First, it's important to note that the 2013 Impact Report showed that energy storage operating under the program thus far has actually increased emissions:

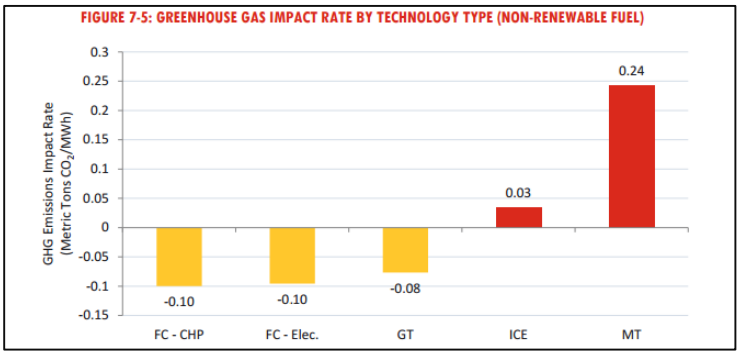


But, we understand that the Staff has assumed that this past performance is not reflective of future performance (a principle that we support and that should be applied across all emerging technologies). The Staff Proposal recommends that the minimum equivalent hours of dispatch for storage be reduced from 520 hours to 260 hours. Appendix C of Decision 15-11-027 found that at 70% RTE (70% being the minimum efficiency for program eligibility) an energy storage resource would have zero GHG reductions over its ten year life span. But, to be conservative, let's consider the first year emissions reductions, which are calculated to be 27 kg/MWh.

Year	Off-peak ER	On-peak ER	GHG emitted	GHG avoided	Net GHG per MWh
1	382	544	580	606	-27
2	382	544	585	606	-21
3	382	544	591	606	-15
4	382	544	597	606	-9
5	382	544	603	606	-3
6	368	524	587	584	3
7	368	524	593	584	9
8	368	524	599	584	15
9	368	524	605	584	21
10	368	524	611	584	27

If we consider 1MW of rebated energy storage capacity dispatched 260 hours of the year (130 total discharges, each one lasting two hours per program rules, which equals 0.5MW/hour), reducing 27 kg/MWh in its first year, that resource will achieve 3,510 kg

of GHG reductions [27 kg/MWh * (260 hours * 0.5MW)]. By contrast, the SGIP Impact report found that all-electric fuel cells reduced 0.10 MT CO_2/MWh (100 kg/MWh).[25] Using the same methodology and data from the Impact Report all-electric fuel cells reduces 648,200 kg of GHGs each year per megawatt.



If the purpose of the Staff Proposal's 'ranking' of technologies is to determine at what levels to provide capacity rebates, then how is it reasonable to rank energy storage (3,510 kg of annual GHG reductions per MW) higher than all-electric fuel cells (648,200 kg of annual GHG reductions per MW) or other technologies with similar operating characteristics? This example serves to highlight a broader concept that is overlooked by the Staff Proposal's arbitrary claim: "Renewables are given '3'; natural gas based technologies are given '1.'" Since renewables (and energy storage) are used intermittently, they only actually reduce emissions when they are being used. Since all-electric fuel cells and some other natural gas technologies operate 24x7x365, they in some cases reduce more emissions on a per MW basis. Since the purpose of Appendix C of the Staff Proposal is to determine capacity rebate levels for various technologies, the only appropriate way to measure impacts is on a 'program goal impact' per rebated capacity basis.

3) The Staff Proposal suggests basing incentive levels off of the recommended program goals but then selectively chooses certain goals. Consistency in the application of the design scheme is important.

[25] 2013 Impact Report Figure 7-5

While Bloom supports the concept of assigning incentive levels based upon each technology's contribution to program goals, this concept must be implemented in a thorough and data-driven manner. The CPUC can use the framework provided by the Staff Proposal, combined with existing program data, to develop a robust system for determining incentive levels. Below is Bloom's recommendation of the most logical and straight-forward approach for doing so (with the inclusion of all-electric fuel cells which were excluded from this table in the Staff Proposal), the results of which are summarized in Table 1.

Environmental Goals

- **GHG Reductions:** To replace the arbitrary assignment of ratings used in the Staff Proposal, the CPUC should use data from the 2013 SGIP Impact Evaluation (when available) or the most recent, relevant, vetted industry data (for technologies not included in the 2013 SGIP Impact Evaluation) to estimate the GHG reductions per MW of rebated capacity for each technology. Annual GHG reduction per MW was calculated as (kg CO_2/MWh*Capacity Factor* 8760 hours/year*1 MW). A "3" was assigned to technologies with reductions greater than 100,000 kg CO_2/MWh, a "2" for those with reductions between 0 and 100,000 kg CO_2/MWh, and a "1" for technologies that led to increased GHG emissions. Capacity factors and GHG emissions reductions factors are drawn from the Itron SGIP Impact Evaluation for generation technologies. For energy storage, based upon D.15-11-027, we used "[27 kg/MWh * (260 hours * 0.5MW)]", as described in our comments above, as the best estimate of the expected operating characteristics of SGIP energy storage projects. All renewable and biogas technologies were assigned a "3".
- **Criteria Air Pollutants**: No change was made to the assigned values for the technologies included in the Staff Proposal. A "3" was assigned to all categories of all-electric fuel cells, which are non-combustion technologies that have negligible criteria air pollutant emissions.
- **Water:** Water should be added as a metric as it is called out in the staff's proposed program goals.[26] We have included "TBD" for all technologies as we cannot presume to

[26] Staff Proposal, Page 7

be an expert on each of the technologies in SGIP. However, moving forward, the SGIP Impact Report should capture the amount of water used annually per MW of rebated capacity for each technology in order to determine the water reductions for each technology in comparison to the 377 g/MWh[27] estimated by the CEC as the appropriate point of comparison for demand reductions.

***Grid Support*:** Grid support should be split into the five categories below, consistent with the proposed program goal structure:

- **Reduce or Shift Peak Demand:** The assigned values for Grid Support in the staff proposal were used with no changes. A "3" was assigned to all categories of all-electric fuel cells, which have the second greatest CAISO Peak Hour Impact among all SGIP technologies according to the Itron SGIP Impact Evaluation.
- **Improve Efficiency and Reliability of T&D**: Because this grid support goal is so closely related to lowering peak demand, assigned values were treated the same as above.
- **Lower Grid Costs:** "Lower Grid Costs" has not been measured in Itron Evaluation reports. Should it be measured in future reports it could then be added to the scoring metrics. The metrics should be scored for each technology based on data. The best data source is the annual Itron Impact Evaluation Reports which evaluate all of the technologies and their performance in the program.
- **Ancillary Services:** Ancillary Services should be added as metric as it is called out in the Staff's proposed program goals.[28] We have included "TBD" for all technologies as we cannot presume to be an expert on each of the technologies in SGIP. However, moving forward, the SGIP Impact Report should capture the ancillary services provided annually per MW of rebated capacity for each technology.
- **Customer Reliability:** Assigned values are based on Itron SGIP Impact Evaluation data showing the portion of capacity still online as a function of age. Based upon Figure 5-6 of the 2013 Impact Report, technologies with less than 80% of installed capacity online were assigned a "2", those that remained above 80% were assigned a "3".

[27]http://www.energy.ca.gov/title24/2013standards/prerulemaking/documents/current/Reports/General/2013_Initial_Study_Air_and_Water_Emission_Factors.pdf
[28] Staff Proposal, Page 7

Market Transformation: "Market Transformation" should not be included as a scoring metric. As previously discussed, this is not a measureable goal and does not have a clear definition.

Need for SGIP Support: "Need for SGIP Support" should not be included because it is not a measureable goal. The inferred intent of this goal – to make sure that as technologies improve they graduate from the SGIP program – is already being met by the existing program rule to have a declining incentive rate. Moreover, the Staff's proposal to rely on the Cost Effectiveness study from Itron is inappropriate for several reasons. First, Itron has publicly proclaimed, including on the December 21, 2015 webinar presenting the study that the report is not intended to make recommendations about SGIP incentive levels. Second, the report relies upon historical data that is not an appropriate indicator of future performance. Just as the Staff Proposal does not look at the past performance of AES technologies for determining the extent to which they can be expected to reduce emissions in the future (see GHG example above) staff cannot look at previous generations of other technologies to predict future performance. This is an unfair and biased approach. Third, the report contains a number of key flaws that are discussed in the "Eligible Technologies" section of these comments.

Table 1: Proposed Metrics and Scoring to Determine Rebate Levels:

	GHG Reduction[a]	Criteria Air Pollutants[b]	Water	Reduce or shift Peak Demand[c]	Improve efficiency and reliability of T&D[c]	Ancillary services	Customer Reliability[d]
Weighting Factor	1	1	1	1	1	1	1
Wind	3	3	TBD	1	1	TBD	3
WHP (ORC)	TBD	3	TBD	1	1	TBD	TBD
PRT	3	3	TBD	1	1	TBD	TBD
ICE NG	1	1	TBD	1	1	TBD	2
ICE OSBG	3	1	TBD	1	1	TBD	2
ICE DBG	3	1	TBD	1	1	TBD	2
Microturbine OSBG	3	1	TBD	1	1	TBD	2
Microturbine DBG	3	1	TBD	1	1	TBD	2
Gas turbine NG	3	1	TBD	3	3	TBD	3
Gas turbine OSBG	3	1	TBD	3	3	TBD	3
Gas turbine DBG	3	1	TBD	3	3	TBD	3
FC CHP NG	3	3	TBD	2	2	TBD	2
FC CHP OSBG	3	3	TBD	2	2	TBD	2
FC CHP DBG	3	3	TBD	2	2	TBD	2
Energy Storage	2	3	TBD	3	3	TBD	3

FC e NG	3	3	TBD	3	3	TBD	3
FC e OSBG	3	3	TBD	3	3	TBD	3
FC c DBG	3	3	TBD	3	3	TBD	3

[a] Based on calculated annual GHG reduction per MW (described above); GHG reduction and capacity factors: Table C-4, Figures 5-4 and 5-5, Itron 2013 SGIP Impact Evaluation, D.15-11-027 Appendix C [b] Values directly from Staff Proposal; added FCe numbers referring to Staff's data source: Appendix D, Itron 2013 SGIP Impact Evaluation [c] Values directly from Grid Support category in Staff Proposal; added FCe numbers based on Figure 6-5, Itron 2013 SGIP Impact Evaluation [d] Based on Figure 5-6, Itron 2013 SGIP Impact Evaluation

E. Rebate Step Declines

Bloom agrees that the declining rate should be reevaluated. A steeper decline will speed up market transformation and move technologies through the program more quickly. It will also ensure efficient use of limited SGIP funds thus allowing a greater number of customers to take advantage of the program to deploy a greater number of projects. Bloom supports a decline of 15% at each rebate step (be it annually under the current design or at each dollar-based step down as proposed), consistent with our recommendation in 2011.[29] Importantly, all technologies should be held to the same declining rate.

VI. Additional Topics

A. Performance-based Incentives

Bloom agrees with the Staff recommendation that the current approach to PBI for natural gas technologies be maintained.

B. Operating Requirements for Energy Storage

SGIP incentives should only be awarded for those projects which will meet the eligibility requirements and program goals, including GHG reductions. All technologies should only be included in SGIP if they are proven to reduce GHG emissions. All technologies should be required to verify operation in a manner that reduces emissions, and verify emission reductions on an ongoing basis through metering during the PBI period.

The CPUC should require AES technologies to prove that they are designed for daily cycle applications before being deemed eligible for the program. If AES systems are used infrequently, they do not provide enough of a ratepayer benefit to justify their inclusion in the SGIP because they will not meet the program goals of GHG reduction, criteria air pollutant reduction, demand reduction, or the 10% capacity factor eligibility requirement for AES. If they

[29] R.10-04-005, Comments of Bloom Energy, Inc. to the Proposed Decision Modifying the Self-Generation Incentive Program and Implementing Senate Bill 412, filed August 8, 2011, p 12.

are to be used as backup they are and should remain ineligible for the program. The PBI process should be structured to ensure that *all* technologies are actually used as intended by the program.

C. Dual Participation in Demand Response Programs

Dual enrollment in demand response (DR) and SGIP should continue to be allowed for distinctly separate loads. That is, a customer should not be able to use SGIP and a DR Program for the same electron. Customers may choose to use SGIP for one part of their load and keep a different part of their load available for participation in DR. Firm generation technologies like Bloom provide consistent output – this means there is no risk of multiple incentive payments being made for a single action and no need for additional requirements. For technologies that can provide demand response services (i.e. storage) the CPUC should ensure that the program rules and metering requirements are structured to adhere to the policy to not allow multiple incentive payments for taking a single action. Bloom recommends that the existing program rules are likely sufficient, but additional metering, monitoring, and verification may be necessary to ensure technologies follow program rules.

Lastly, Bloom urges the CPUC to rely upon SGIP for other DR related matters. On July 23, 2015 the Commission issued Resolution E-4728, disallowing natural gas consuming equipment from participating in its Demand Response Auction Mechanism (DRAM) program. More recently, on September 29, 2015 Energy Division published a proposal to disallow any fossil-powered generation source (whether combustion, non-combustion, CHP or all-electric) from participating in demand response programs, beginning in 2017. Bloom filed comments on the DR Staff Proposal and suggested the CPUC to use the SGIP definition of "backup generator" as the definition for DR programs going forward. SGIP already disallows backup generators from receiving incentives. By relying upon this time tested definition the CPUC can be confident that true backup generators will NOT be able to participate in DR programs and the CPUC can then focus their attention and resources to ensuring the proper interplay of SGIP and DR going forward.

D. Individual Manufacturer and Installer Caps

Bloom agrees with the Staff Proposal to keep the cap at 40%, and apply the cap to both installers and manufacturers. Bloom does not agree, however, with the staff recommendation to change the way the 40% cap is applied. The cap should be continued to be applied to the overall available budget. Bloom also supports the recommendation that the cap can be lifted from 40% if

there is no demand.

E. California Supplier 20% Adder

Bloom suggests that the CPUC maintain but tighten the requirements in place prior to the changes made to the California supplier language in SB 861. It's important that the integrity of the SGIP be maintained and the manufacturer credit be accurate and enforceable. A manufacturer adder should only go to companies that are headquartered and manufacturing *critical components* of the technology in California. The existing parameters in place are a simple and effective test to ensure that the adder only goes to technologies that are significantly contributing to the California manufacturing job base.

Particularly worrisome is a recommendation made in Footnote 69 of the Staff Proposal that appears to suggest software developers be eligible for a manufacturing credit. Since a software developer does not manufacture, they should not be eligible for a manufacturing credit.

Additionally the recommendation that the PA's verify 50% of the value of the product is made in California has good intentions, but as noted by staff, would be difficult to implement

As the current requirements are transparent and clear, and no fault has been identified, Bloom suggests the current process be maintained.

F. Megawatt-based Project Size Rebate Tiers

Although Bloom does not disagree that some technologies, such as fuel cells, can inherently serve larger multi-megawatt projects, Bloom does not agree that SGIP incentives should be awarded beyond 3 MW. SGIP is clearly oversubscribed. Changing the size limitation will only serve to deplete funds more quickly across fewer participants. This is contrary to staff's interest in seeing the program funds spread more widely across market participants.

G. Load-based Rebate Caps for Storage

No comment.

H. DC Microgrids

Bloom agrees with the staff recommendation that SGIP should ***not*** provide incentives for micro-grid *enabling* technologies such as microgrid controllers and other "middle wear". This equipment does not, on its own, meet the goals of SGIP even though such equipment may be used to enable SGIP technologies. The CEC has already held solicitations for funding for micro-grid projects and SGIP does not need to duplicate that work.

I. Locational Adder

Bloom Energy supports the concept of recognizing the benefits of particular attributes of technologies based upon the impact they will have, but reiterates caution that SGIP is already a complex program and any changes should be specific and with a clear value added. With this in mind, CPUC should not implement a new layer of complexity to reflect locational benefits at this time. Additionally, the staff recommendation to rely on the DRP proceeding is a good idea, but the locational information in that proceeding will not be available until after SGIP is hoped to be up and running in 2016.

J. Rules for Adding New Technologies and for Handbook Changes

No comment.

K. Energy Efficiency Audit Requirements

No comment.

L. Sampling for Inspection of Systems

No comment**.**

M. Cap O&M Project Costs

Unfortunately, the Staff Proposal entirely ignored Bloom's comments on the ACR regarding much needed adjustments to the project cost element of SGIP. In order to have a check and balance to the program to ensure that any one technology or project's incentive is not excessive, the CPUC should limit the total project incentive to no more than 30% of the capital cost of the technology. Capital cost is the cost of the technology, excluding any interconnection, O&M, installation, etc. This will provide verification that the incentive is not overly generous by ensuring 70% of the total capital costs will be paid by the customer. The current structure may allow applicants to use SGIP to subsidize high installation or maintenance costs. Excluding costs that are variable across projects (i.e. installation costs, maintenance costs) will ensure that SGIP funds are deployed as efficiently as possible to enable the greatest amount of SGIP capacity possible at sites where it is economically-viable. In order to effectively implement this measure the CPUC need only collect the capital cost data of the technology and ensure that the ratepayers' contribution does not exceed 30%. Currently the data collected for "total project costs" includes at least eighteen[30] different line items that vary by technology and project,

[30] 2013 SGIP Project Cost Breakdown Affidavit

making the current policy of the customer paying 40% of the project costs largely unenforceable and inconsistent across technologies. Narrowing the focus to the capital cost of the SGIP technology itself will prove to be simpler, transparent, and effective and will ensure that the ratepayer's contribution is properly limited.

N. Measurement, Evaluation and Public Reporting

Bloom supports the metrics outlined in the Staff Proposal for measuring and evaluating the program. Bloom does not see a need for audits of PAs**.** Auditing, or overseeing, the PAs is the responsibility of the CPUC and should done internally as any third party auditor will pull money away from projects and lessen the positive impacts of the program.

O. Marketing and Outreach

As stated throughout the Staff Proposal, the program has participation that exceeds funding. Therefore the program is not in need of marketing or outreach- customers are plentiful. The M&O budget should be redirected to project funding.

CONCLUSION

Bloom looks forward to working with the CPUC and stakeholders on furthering the success of SGIP.

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Respectfully submitted,

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